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THE BIOLOGICAL PROBLEMS OF TO-DAY.*

Paleontological Problems. PROFESSOR HENRY F. OSBORN, Columbia University.

THE chief paleontological problems of the present day are involved in the phylogeny of the Mammalia, for upon this depend both Embryology and Comparative Anatomy, as well as Paleontology. The last decade has been one of a rapid succession of brilliant discoveries in South America and in southern Africa, and of a very great expansion of our knowledge of the North American fauna, together with some single discoveries of great importance, chief among which is the discovery of the foot structure of *Psittacotherium* by Wortman, leading to his exposition of the order Ganodonta as ancestral to the Edentata. Of great interest also is the hypothesis recently advanced by Matthew, that *Mixodectes*, of the Basal Eocene, is the ancestor of the Rodentia, instead of being connected with the Primates, as Cope supposed.

As regards the South American forms they are mainly important as revealing the existence of a new life center upon a continental scale; as tending to demonstrate a continental union between South America and Australia, and as exhibiting Marsupials which are more nearly allied to Placentals than any hitherto known. As Lydekker

*Discussion before the annual meeting of the American Society of Naturalists held at Ithaca, N. Y., December 28, 1897.